PSYCHOLOGICAL ASSESMENT AND DISTURBANCES

Psychological assessment of the obese child and adolescents: principles

Caroline Braet (PhD), Sandra Verbeken (PhD)

Department of Developmental, Personality and Social Psychology

Ghent University, Ghent (Belgium)

Corresponding author:

Sandra Verbeken

Department of Developmental, Personality and Social Psychology

Ghent University

Henri Dunantlaan 2

B-9000 Ghent (Belgium)

tel +32 (0)9 264 64 12

fax +32 (0)9 264 64 99

Sandra.Verbeken@UGent.be (S. Verbeken)

1. Introduction

Research demonstrated that the eating behaviour of obese individuals consists of a wide variety of patterns like eating caloric rich food to compensate for negative feelings, vomiting after overeating, eating at night, restrained eating, meal skipping (1).

It may be difficult to grasp and treat these eating behaviours specifically when they are related to psychological factors. Early assessment and treating of these problems in children is important as they can easily reach more serious levels for which more intensive and expensive interventions are required (2) and they can hinder weight loss.

Therefore, the following chapter aims to summarize psychological antecedents observed in paediatric obesity. The literature indentified several psychological models that can guide a thorough psychological assessment. There is no 'leading' theory and clinicians will test different hypotheses when an obese child applies for help. Restraint attitudes, emotional factors, learning mechanisms, personality and family variables will always be explored to help tailoring the treatment program to the individual needs of the child. Therefore it is recommended to construct a psychological profile of every obese child seeking treatment.

The models, the psychological factors and the specific measures to be used in an assessment will be presented. Finally, issues related to screening in a paediatric setting are discussed.

2. Psychological models

2.1 Restrained or Controlled eating

Obese children can demonstrate psychological attitudes like 'dietary restraint' or the cognitive preoccupation with weight, shape and food restriction. This is not the same as 'dieting' or the actual use of weight control practices to reduce energy intake (3). Both are prevalent in obese adults and children (4,5).

These cognitive preoccupations are often harmful. During dieting internal control of hunger and satiety is disregarded in favour of cognitive control (by the child or by the parents) over the child's eating behaviour. However the cognitive control is often too rigid and easily disrupted and is in sharp contrast with a healthy lifestyle.

The Dietary Restraint Theory (DRT) is a psychological model that explains eating problems after following a strict diet. It was demonstrated that the cognitive control over eating often fails under distress or fatigue and that this increases the risk to overeat. This way, dietary restraint is often alternated with binge eating which lead to weight increase. This pattern is also prevalent in obese children (6). Furthermore failures of restraint behaviour may cause distress, which in turn fosters emotional eating. Therefore, since the occurrence of abnormalities in eating style are likely to increase, strict dieting and dietary attitudes are considered as psychological risk variables (7, 8).

To conclude, assessing an challenging dietary restraint attitudes and behaviour is important to guide our understanding and therapy. Advising obese children to restrain their eating without fully recognizing the history of dietary restraint attitudes may result in more rigid dieting-intentions which in turn may lead to the evidenced psychological side-effects and loss of control (9).

2.2 Emotional Eating

Negative emotions due to life events or daily minor stressors affect eating behaviour in some people (10-12) both during meals and via snacking. Specifically under mild stress, more comfort food consumption (energy-dense food due to high sugar and fat content) and a more unbalanced eating pattern is observed in 30-43% of adults and adolescents (13).

Since obese youngsters daily suffer from body dissatisfaction, weight concerns, social isolation and low self-esteem (14) there stress level is increased (15). Moreover, negative emotions are related with poorer obesity treatment outcome in some (16) but not all (14) studies.

The Affect Regulation Theory (ART) defines these observations as emotional eating (17). In this model mainly eating in the absence of hunger is considered as an effort to regulate negative emotions because food (a) provides comfort on a psychological level, (b) reduces arousal on a biological level, (c) distracts people from their emotional stage and (d) overshadows negative affect (18, 19).

To conclude, assessing emotional eating and exploring the potential underlying factors like stressors, low self-esteem, negative mood, body dissatisfaction or social isolation is relevant as it can guide our therapy. In this context, assessment of quality of life should also be included.

2.3 Reward driven eating style

Obese children can also show an increased responsiveness to food in the absence of dieting attitudes or emotions. For these children, the sight, smell, taste of food leads to an automatic approach reaction thereby ignoring feelings of satiety. They can be characterized as high reward sensitive (RS) (20).

According to Gray's Reinforcement Sensitivity Theory (RST) (21), RS reflects functional outcomes of the behavioral activation system (BAS). Activation of BAS causes behavioural activation and a tendency to approach goals. Imaging research in adults showed a higher positive association between RS (22) and activation in brain reward areas to appetizing foods relative to bland foods (23). Furthermore, compared to average weight peers obese youngsters show greater activation in brain reward areas in response to food stimuli (24) and in response to food consumption (25) suggesting that obese individuals versus average weight counterparts find palatable foods more rewarding (26,27). Therefore, we assume that RST can explain a third mechanism underlying disturbed eating.

However, also cognitive processes have to be taken into account. The dual process model (28) posits that self-regulation or the decision to go for the immediate reward and eat palatable food or to strain for the larger future benefit of weight loss and improved health is the product of the balance between bottom up reward processes and active top down inhibitory control. Research point at parallels between obesity and ADHD in children (29-32), and between obesity and other potentially addictive behaviours, all characterised by high RS and deficient inhibitory control (33,34).

In sum, obese children may show an increased responsiveness to food, sometimes regarded as craving or addiction to overeating even in the absence of dietary restraint or emotional eating. Such 'reward driven' eating patterns may be considered as a probably third pathway, contributing to disordered eating behaviour. Consequently, assessing RS is relevant as it can further guide our understanding of disturbed eating and therapy.

2.4 Impact of family pathology or a comorbid psychopathology

For most children, the home-environment is the central socialization context influencing the risk of obesity in offspring. Although the dynamics between parent and child are difficult to unravel, there are three alternative mechanisms to consider.

First, parents adopt different feeding styles and strategies toward their offspring and it is reasonable to suggest that the way parents feed their children may be related to a child's eating behavior and weight status (35). Parents of an obese child may experience more difficulties implementing adequate daily food-rules and as a consequence choose less adequate feeding strategies (36). Research suggests that parental report of restrictive feeding is paradoxically associated with increased child BMI however based on observations at mealtime a lack of parental control instead of self-reported overcontrolling over children's nutrition emerged within overweight families (37). So, we wonder whether parents are aware of their parenting style.

It is noticeable that both positive involvement as too stringent parental involvement can be considered as dysfunctional. Since the 70's, the lack of parental involvement was evidenced for both general parenting as feeding situations in obese families (38). The presence of ineffective rules and discipline, the use of food to reinforce a child's behaviour, subtle signs of emotional abuse all can have adverse side-effects. Population based studies are needed before these findings can be generalized.

Second, it was shown that psychiatric pathology in mothers, but not in fathers, was associated with the severity of obesity in their children (39).

Third, much of this research on family influences is correlational and direction of effects cannot be determined. It is likely that the parent-child relationship is bidirectional, with children's temperament also challenging parent' feeding practices. For example, some children have a more irritable or reactive temperament or show more internalizing symptoms (e.g. anxious feelings, depressed mood, psychosomatic complaints) or externalizing symptoms (e.g. impulsive behaviour, aggression, oppositional behaviour) (40). This can be measured easily with self-report scales or parental report although it must be interpreted with caution. In obesity research, psychological problems and mental disorders have always been discussed as causes of the problem (41,42).

We propose the Diathesis-Stress Model (DSM) for understanding the interaction between child characteristics and environment for explaining mental problems in children with obesity. Being

overweight as child in a society which promotes the thin ideal might lead to negative feedback, low-self-esteem and this can form a scar (a diathesis) making these children more vulnerable when confronted with new stressors (43). According to our perspective on psychopathology, the 'spirit of the times hypothesis' (44) (characterized by a thin ideal and strong expectations regarding school and social performances for all children) predicts a general increase of psychological problems in overweight individuals.

To conclude, in childhood obesity it is very relevant to screen for family problems, but cautiously since (1) parents do not seem properly aware of their parenting style and (2) some children can be more difficult to educate. Consequently, also child characteristics on both internalizing and externalizing symptoms should be assessed.

3. Psychological assessment of youngsters with obesity

The identified psychological variables can guide a more thorough paediatric assessment. In the influential ECOG position paper "The psychological approach of the eating behaviour of children who are obese" (45) a multi stage procedure for assessment is recommended which is adopted here.

First, the different possible psychological models (M) can be tested via a short interview.

M1. Is the child preoccupied with restricting food, dietary restraint attitudes or severe weight and shape concerns?

M2. Does the child report emotional eating?

M3. Does the child show a high reward sensitivity (in general or specific to food cues), a low inhibition capacity or report to be addicted to food?

M4. Are there problems in the family related to the parenting of the child? Or, does the child show internalizing or externalizing problems?

If one or more answers were positive, we must assume psychological problems and further assessment is indicated. For the assessment of psychopathology, it is recommended to use a 'multiple stage' strategy (46). This approach involves the use of a screening test to select potential cases for further assessment. Since observation or interview are neither very reliable nor cost-

effective methods (47), questionnaires are recommended for screening mental problems in children and adolescents via parental report (all ages) or child report (from 8 years). It is recommended to use age-appropriate screening measures to verify the answers elicited by the interview questions. To interpret the score on a screening instrument and evaluate children's functioning, clinicians have to compare the child's raw score with normative samples using percentiles or *T*-scores. Also cut-points can be used to identify an at-risk child.

For those participants exceeding the cut-point score a next assessment period involves a second administration of the questionnaire along with a structured interview.

Overall, the use of reliable, valid screening methods and if possible multi-informant testing assessing both the child and the parent's perception on the same domains is recommended. The table below lists a selection of instruments considered to be reliable, valid and available for testing the different models. A variety of psychological questionnaires (10 minutes each), tasks (20 minutes each) and interviews (45 minutes each) can be used (see Table1). Some are completed by the child, some are filled in by the parents and for some, both a child- and parent version is available. We must acknowledge that some of these measures can only be used by psychologists (the interviews) but specifically the questionnaires can easily be assessed (digitally) and scored and can also be re-administered in follow-up. To the best of our knowledge, for each hypothesis there are different options (see table 1).

-insert table 1 here-

4. Optimal screening procedure

4.1 Screening for different psychological models included in one questionnaire

To keep the screening procedure cost-effective and to minimize the burden of a long assessment procedure on a paediatric consult short questionnaires can be used. Further, one questionnaire for the child and one for the parent can often be administered to screen for the different psychological models. For this task, for example the DEBQ (child version) combined with CBCL (parent version) is most efficient

as it can help to test 4-5 models at once. The children at-risk can be identified using cut-points, based on norms from a non-clinical sample. It will always be interpreted with caution as screening instruments reveal substantial false positives and false negatives. So, if means are available double check the child's perspective via interview or observation.

4.2 Considerations for referral and the importance of good communication

In some cases it may be relevant to consider referral to a suitable qualified paediatric psychologist for more in-depth assessment and treatment. For example, when in the initial assessment disordered eating is recognized or there seem to be problems within the child or home environment that may impede progress in the therapy, and when the assessing clinician does not feel adequately skilled. A first consultation may also identify cases where the parents should be referred to adult specialists for additional assessment and support for themselves (e.g. to address coping skills, parenting skills, substance dependence, depression etc).

As parents may often not be aware of the importance of underlying psychological health for their child's overall health, they may be reluctant to answer questions about these issues. It is imperative for the clinician to overcome this initial resistance by addressing the child and family in an appropriate child-friendly manner and to ask permission to focus on these domains as well. His ability to communicate openly and with compassion builds trust and is essential in order to gain accurate insight into child and family life. Fostering an environment of support and understanding is important in order to avoid stigmatization or discrimination of the child and family.

4.3 Red flags for referral

If initial screening identifies any issues where child protection might be of concern (emotional abuse, physical abuse, serious bullying), it is recommended that prompt referral to appropriate services is undertaken. Also, if the child gains or loose considerable weight in a period of six months referral to appropriate services may be indicated.

5. Discussion

We must recognize that some children who are obese can be "psychologically healthy" with no addiction or eating disorders, and have a good quality of life, with preference for healthy nutrition and high

intrinsic motivation for physical activity. The new paradigm of "Health @ any size" (48) has to be evaluated as an option for some, but not all children.

However, we must be aware that the psychological models propose hypotheses that can be relevant or not for a specific child. As indicated above, not all scientific issues regarding the underlying mechanisms have been investigated yet and some models have more evidence than others. In future research, we need to study whether we must separate/differentiate behavioural subtypes according to the different underlying psychological models.

Finally, psychological models need to recognize that we live in a toxic environment, which can influence the child on a macro-level, besides the psychological influences. Therefore an assessment process should also consider the role of friends, the school, the neighbourhood and the media.

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Table 1. Subscales testing psychological factors relevant in paediatric obesity assessment

Subscales testing A psychological Model	M1 Dietary restraint	M2 Emotional eating	M3 Responsiveness to food cues	M4 Family pathology	Mental problems
Parent+child					
DEBQ*	x	x	x		
CBCL*		x			x
Child measures					
EDE-Q*	x				
cheat*	x				
EDI*	x				
BIS/BAS*			x		
SPPC*		x			x
CDI*		x			x
EDE	x				
KID-SCID		x			x

STROOP			x		
Parental measures					
CFQ*				x	
Parental rejection*				x	

*Legend: *=questionnaires*